

Are smartphones turning us into shopping addicts? A behavioural economics perspective on the implications of mobile proximity payments.

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Abstract

In this paper we investigate, with the help of recent behavioural economics findings, the various factors behind the decision of mobile payment adoption and the ways in which smartphone-enabled transactions may influence a person's perception and the level of her spending. According to Eurostat, in 2018, three out of four people between the age of 16 and 74 years reported having used a mobile phone for private purposes. In the European Union, smartphones sum up more than 80% of all devices used in the private sector to access the Internet and the mobile services industry make up for Europe's 3.3% of GDP. From checking the weather to trading on the stock exchange, for over a decade now, smartphones are replacing much more than just the traditional ways of communication. We wonder about whether mobile devices will eventually take the place paper notes or bank cards. The timing for this type of questions could not be better, as smartphone users become increasingly drawn to mobile payment and adoption rates rise across Europe. In this study we discuss the idea that mobile proximity payments may reduce the mental capacity of the user in processing the payment and may cause consumers to overspend. Numerous studies show that intensive usage of device-enabled payments can lead to addiction. Because modern cashless transactions are now designed to take place at much faster rates than ever before, smartphone payments poses the intrinsic ability to provide the user with immediate rewards and trigger addiction.

Keywords: behavioural economics, mobile proximity payment, consumer behaviour, smartphone payment, Europe, card payments, addiction, immediate rewards.

INTRODUCTION

Traditional payment methods, such as cash, SEPA transfers and debit card payments are widely spread across all European countries. This type of transactions continues to dominate our financial-economic landscape and the way we conduct business. However, in the past decade, newer, faster and more innovating means of payment are gaining traction, such as the mobile payments market, which shows a slow, but impressively steady growth.

In this paper we provide relevant behavioural economics insights related to non-cash payments in general and with a special attention to cutting edge technologies like mobile proximity payment systems. We elaborate on the fact that cashless transactions may reduce the user's ability to conceptualize the amount of money being spend and emphasize on the idea that the ease of making transactions via mobile payment can influence consumer behaviour by triggering impulsivity and tapping into his inborn tendency to seek immediate gratification.

Mobile payments represent "any transaction on a mobile handset where ownership of money changes hands" (Pope et al., 2011). This new method of exchanging goods and services via mobile payment is meant as a way of making transactions less complicated and faster than ever before, enabling transparency, strengthening the level of security for financial transactions and reducing the risk of loss or cash theft.

Mobile transactions can be split in: remote payments and mobile proximity payments (Shin S. et al., 2014). A Remote Mobile Payment (RMP) is a transaction that takes place between a customer and a retailer situated far from each other, for example when goods and services are purchased by using a SMS text message or by shopping online with a mobile device. A Mobile Proximity Payment (MPP) is a transaction that occurs at point of sale (POS), for example in a physical retail store, when the payment for the purchase is made by holding a mobile phone against the merchant's payment terminal.

Currently, the most spread technology making mobile transactions possible is Near Field Communication (NFC). NFC enables bi-directional exchanges of data packages when a smartphone and a contactless enabled payment terminal (or NFC reader) are held a few centimetres from each other (Chiriac et al., 2018). The transaction then takes place rapidly and securely through what is known as radio frequency identification (RFID), a protocol similar to creating a wireless link between the two devices. The result is an extremely cost-efficient, time saving transfer of data, as this new type of technology uses substantially less amounts of energy than the usual wireless payment communications and no paring codes or PIN authentications have to be employed to establish the link between the two devices.

According to the regional report published by GSMA (2018), an organisation that represents the interests of mobile operators worldwide, more than 465.1 million individuals in Europe are registered with a mobile provider, this accounts for 85% of the inhabitants. GSMA also notes that mobile technologies and services are responsible for 3.3% of GDP in Europe, an economic value-add of 550 billion euros. In just three years' time, this indicator alone is expected to grow to 720 billion euro or 4.1% of Europe's GDP.

Taking into account the significant number of mobile users, as well as the large amount of underlying technological applications, it is safe to assert that the mobile payment industry will continue to grow rather than size down. But if the odds are in favour and obviously there is a notable market for this type of payment, how come we have not witnessed a broader network of mobile payment users and accepting merchants?

Herzberg (2003) argues that, when it comes to mobile banking, simplicity and security play an important role. We assume this to stand true in the case of mobile payment as well, since the literature on the matter is still developing and there are only a few journal papers about mobile payment, so not enough data to conclude otherwise. Most research regarding the mobile payment industry takes place in the private sector, where various players like banks, financial or telecommunication institutions are keenest on learning about the current status and the future evolution of the mobile proximity payments market.

MOBILE PAYMENT SAVES TIME AND MONEY

When it comes to mobile payments, there are multiple factors that influence adoption and the successful implementation across European markets, for example, the interest customers take in the MPP method being one of the key driver in the fast spreading of the technology across markets. According to the WorldPay Report (2018), 30% of users worldwide have paid via smartphone, but the interest for digital payments being higher among the younger population, where according to WorldPay (2018), 75% of digital millennials have completed a smartphone transaction at POS.

Based on a research by Forex Bonuses (2018) in countries like Denmark and Sweden mobile proximity payment has become more of a default option when it comes to paying for goods at Point Of Sale in local shops and business stores. Among the most cashless economies in Europe, where transactions are completed through non-cash payment methods, are countries like France (39%), The United Kingdom (47%) and Sweden (59%). An interesting situation is the case of Germany, where the mobile payment adoption rate is more the exception and not the rule among the leading European economies.

Based on a report on mobile payment by PwC (2019), a leading digital market analysis company, among the countries surveyed, Germany is, with only 25%, the nation with the lowest rate of mobile payment usage, which reflects a strong correlation to high security concerns confirmed by other studies as well (BitKom, 2019, Postbank, 2018). The PwC's report also suggests that mobile proximity payments seem to be more sought-after in countries like Turkey,

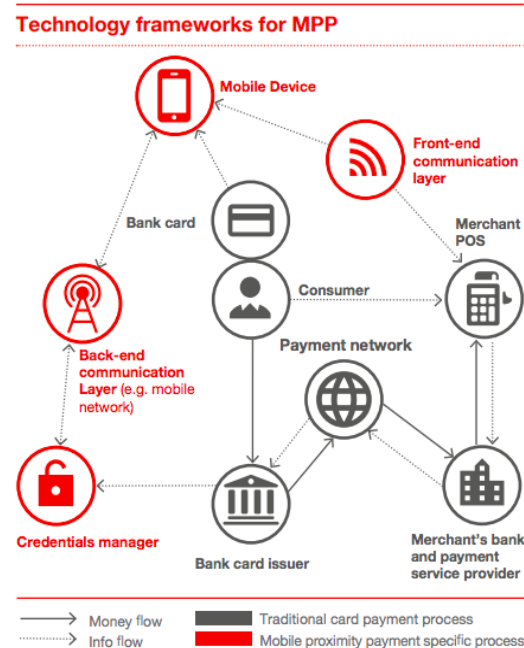


Figure 1. Technology frameworks for MPP, Source: PwC.com, Mobile proximity payment

where the survey shows a 65% usage rate or in countries like Netherlands and Belgium with 51% and 47% respectively mobile payment usages rates.

Hierl L. (2019) explains that, for example, in Germany, at least in the case of the food and beverages industry, many small retail shops, like grocery and bakery shops, still run up to 74 % of all transactions in cash.

Moreover, according to Hierl L., up 94% of all transactions under five euros are still cash transactions. Often food and bakery merchants avoid accepting cashless payment methods because they fear of being charged with high clearing fees. The author tells that even though using cash seems to save the merchant various fees, there are other costs retailers should be aware of, such as costs with: salaries and overtime for cashiers to count the money, various bank fees the retailer has to pay for cashing in or out small change, higher insurance premiums and personnel costs associated with the risk of handling money, even costs with secure transports or cash theft should be considered.

Hierl L. (2019) argues that, especially in the food and baked goods sector, mobile payments should be the main payment method, because it is more hygienical and reduces waiting time for customers. One single paper note may be contaminated to up to 3000 different types of pathogens, that is also the reason why some large bakeries and butcher's shops in Germany chose to have a separate employee responsible only for handling money transactions behind the counter, this way the serving staff do not contaminate meat or products handed out to the customers (Hierl L., 2019, Alemu, A., 2014).

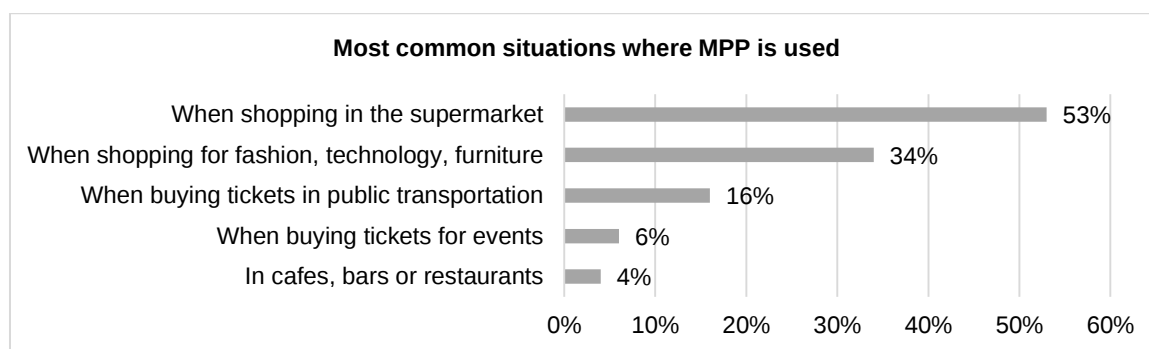


Figure 2. MPP Usage, Source: German BitKom Reserch (2019)

Germany is almost like an exotic bird in the European MPP picture, worth to be studied especially for contrast it generates in the field of cashless transactions. For decades, more than 50 percent of all German retail transaction were made in cash. However, in 2018, for the first time in the German payment history, the preference for cash registered a drop of 1,7 percent, leaving only 48.6 percent of the total retail turnover in Germany to be covered with ready money (EHI Retail Institute, 2019). As a matter a fact, this decrease corresponds to an boost in retail card payments in Germany, with 209.2 billion euros, thus 12.4 billion euros more than last year, retail turnover paid by card (EHI Retail Institute, 2019).

According to a research by The Federal Ministry of Justice and Consumer Protection and BitKom (2019), in Germany 26% of the users in the survey would welcome the idea of a cashless society, in which no physical euro coins or banknotes are used for transactions.

Unsurprisingly, the thought of completely forgoing cash seems much more attractive to the digital millennials, where 43% of the population 18 and 39 years old could imagine themselves completely giving up cash in the future. The BitKom (2019) study also shows that 57% of the interviewed people have never used or cannot see themselves using the Peer-to-Peer-Payment technology for transferring money, whereas 33% of them have used or would be willing to use the Peer-to-Peer technology for making payments.

SECURITY CONCERNS ARE STILL ONE THE BIGGEST HURDLES IN MPP ADOPTION

In the opinion of Kim et al. (2010), individual level of knowledge and ingeniousness about mobile payment of a certain user are two main factors to shape the adoption path of mobile payment. We consider this to be true. Germany, for example, is one of the strongest economies in Europe, with a high affinity for technology, although when it comes to mobile payment technology, adoption rates fall behind.

A recent survey conducted by Postbank in Germany (2018) reveals that safety concerns and lack of knowledge regarding the usage of certain technological applications seem to be the most significant reasons for denying adoption

of MPP. However, the same report states that the number of people that have not used the newly available mobile payment technology yet, has shrunk from 61% the year before to 47% in 2018. We speculate this improvement also coincides with the financial emancipation of digital millennials and the fact that, at least for Germany's case, digital natives have with 60% less knowledge and safety issues in using mobile payment than the rest of the participants in the study.

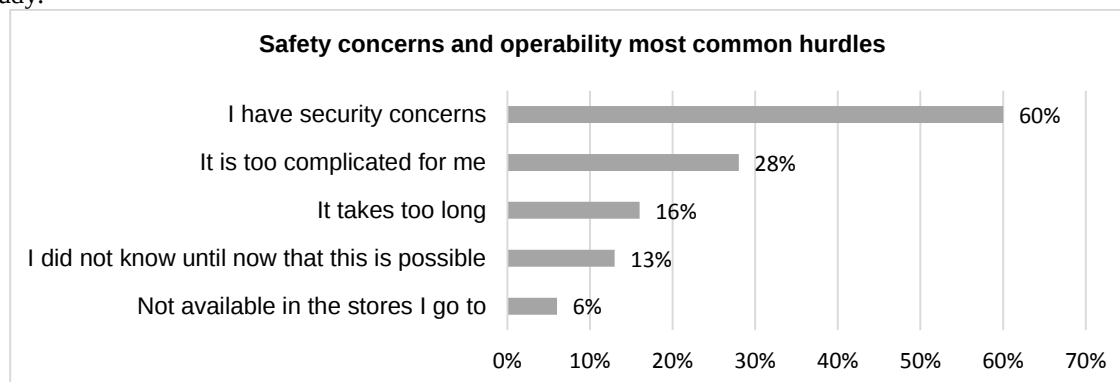


Figure 3. Most common hurdles. Source: German BitKom Reserch (2019)

SMARTPHONE PAYMENT ENCOURAGES OVERSPENDING AND ADDICTION

In this article, the authors bring together information in support of the idea that the usage of mobile proximity payment trigger behavioural effects in a person's brain. There are various types of mobile payment services, for example PayPal, GooglePay, ApplePay, Alipay (most frequent in Asia) etc. (Kang, J., 2018). In principle, these services are backed by a secondary payment method, such as a debit or credit card. This means that the funds, needed for a transaction to take place, are deducted from the user's bank account (Runnemark, E. et al., 2015).

We wonder though, is this a good thing for the user? Yes, this disbursement method is faster. Yes, it is safer and more convenient. Nevertheless, what is the psychological effect that this type of payment has on consumers' behaviour. Prelec, D. and Simester, D. (2001) argue that by alienating the concept of money and replacing it with a token or payment device, such as a credit card or a smartphone, the user usually tends to spend more money than he normally would, when paying with physical money.

Therefore, a very important aspect of mobile payment, that should be factored in, when using smartphone payment is that it reduces the visibility and the mental capacity of the user in processing the payment. Obviously the scope of this technology is to make our lives easier and save us time, but mobile payment also has the capacity to aggrandize the levels of consumption and irresponsible spending.

According to a research by the European Central Bank (2019) the number of card payments per inhabitant is rising significantly every year, reaching almost 70 billion payments in 2017. Payment cards are the most spread payment method in the European Union, accounting for more than half (52%) of all cashless transactions.

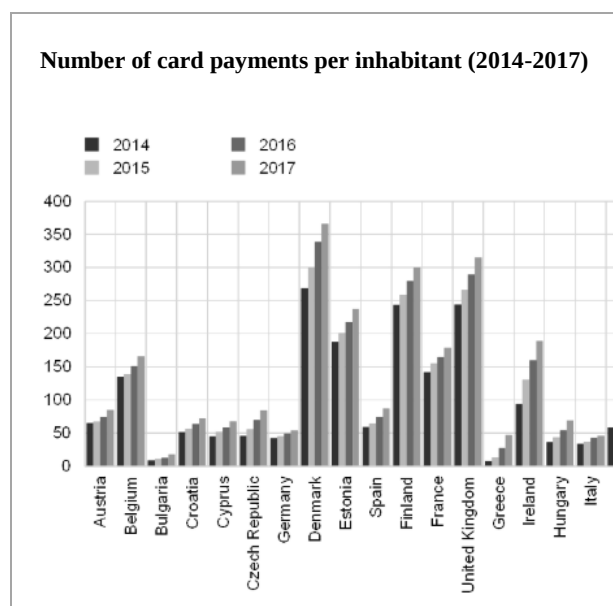
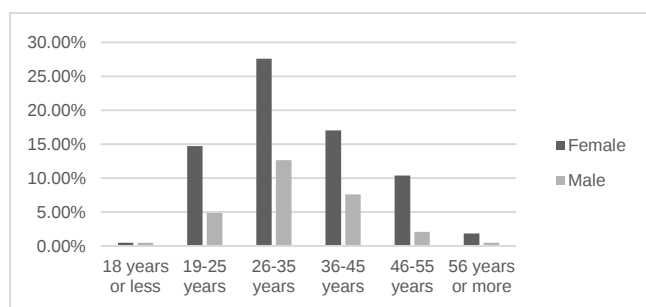


Figure 4. Source: European Central Bank Statistical Data Warehouse.

As it can be observed in Figure 4., there are a few nations across the European Union that are more open than others to non-cash transactions, such as Denmark, Sweden, The United Kingdom, Finland, the Netherlands etc. But then again, there are other countries, like Germany, Italy, Greece, Romania or Bulgaria that just do not have the same predisposition, level of trust or readiness to swap cash transactions with cashless ones. These behaviours are often the result of cultural traits, poor infrastructure or even socio-demographic factors.

For example, in a study carried out on 435 people in Romania, Imbrisca C. I. and Neatu A. M., (2017) seek to determine the factors which alter consumer behaviour with regard to credit and debit cards usage. With the help of an online questionnaire, the authors hope to determine the link between social and demographic factors and the use of cashless payment methods. The study indicates that when it comes to bank cards, age and income are relevant variables, unlike other variables such as gender, marital status, education etc.

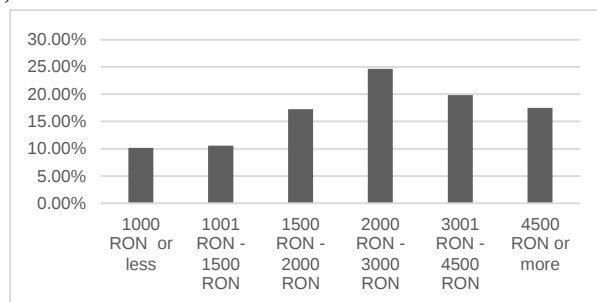


Figure 5. Distribution of participants by age, gender and income, Source: Imbrisca C. I. and Neatu A. M. (2017)

A significant behavioural aspect of cashless payments is the effect of immediate rewards generated in a consumer's mind by the ease of making fast payments, even if, technically speaking, in some cases the profitability of some of these transactions is low, and the rewards are obtained at a costly price (i.e. high interest rates, exchange fees etc.).

Just as Boettiger C. A. et al. (2007) explain the immediate reward bias in humans represents the „tendency to choose lesser immediate benefits over greater long-term benefits” and characterizes alcohol addiction and other substance abuse disorders.

In behavioural economics, this bias is known as discounting rate, when a person “discounts the future” by preferring smaller immediate rewards over larger future rewards. As stated by Kirby K. et al., living in a world where things happen at maximum speed and intensity generates, in the brain of an individual who seeks to meet their needs as quickly as possible, a perfectly normal human reaction.

The studies in the field of addiction, for example those of Robinson T. E. and Berridge B. K. (2008) repeatedly demonstrate that intensive credit card use can lead to addiction, precisely because of how cashless payment devices are designed to work and their intrinsic ability to provide the user with immediate rewards.

Based on this aspect, it can be said that the ease of purchase through such a means of payment greatly intensifies the predisposition of individuals to consumption, and the boundary between autonomy and financial dependence becomes quickly difficult to avoid.

We argue that smartphone payments can have a similar effect on consumer's brain, because of the faster and more convenient way transactions take place.

An experiment conducted by Cheng Y.-Y. et al. (2011) shows that the bias of immediate rewards in financial decisions can be dealt with through the act of prospective imagery, in which an individual actively focuses on the delayed utility rather than the immediate utility.

No doubt, the technology save us a lot of time and mental effort, even so, consumers need to become aware of the risk of overspending and develop internal strategies in using their payment-enabled smart devices in a mindful and responsible way.

CONCLUSIONS

Effective understanding of consumers' behavioural patterns related to the adoption and usage of mobile payments technology is imperative to ensure their successful uptake in the market. This paper utilizes insights from the field of behavioural economics research to investigate the mental processing of consumers while using their smartphone to pay for goods and services.

The recent discoveries in the field of behavioural economics teach us that by using a payment device instead of real money, the visibility and the mental capacity of the user in processing the payment is reduced and consumers tend to overspend. Moreover, faster and more convenient ways of payment prove themselves very useful, but in some cases they can also have a harmful impact on the user by triggering addictive behaviours.

Smartphone payments provide the user with a false sense of immediate reward; through spontaneous purchases they promote impulsivity, regardless if the user can afford the purchase or not. Increasing consumers' awareness regarding the potential risky behaviours that the mobile proximity payments may trigger in the brain is the first step in preventing them.

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